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EXAMINER	
ALAM, SHAHID AL	

ART UNIT	PAPER NUMBER
2162	

DATE MAILED: 08/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/085,593	OZA ET AL.	
	Examiner	Art Unit	
	Shahid Al Alam	2162	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 May 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-9 and 16-28* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9 and 16-28* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1 – 9 and 16 – 28 are pending in this Office action.

Response to Arguments

2. Applicant's arguments filed on May 20, 2005 have been fully considered but they are not persuasive. Applicants argued that the combined references do not teach or make obvious applicants' invention and rejection of independent claim is improper as the combined references fail to teach or make obvious at least the indicated claim recitation.

Examiner respectfully disagrees all of the allegations as argued.

Examiner is entitled to give claim limitations their broadest reasonable interpretation in light of the specification. During patent examination, the pending claims must be 'given the broadest reasonable interpretation consistent with the specification.' Applicant always has the opportunity to amend the claims during prosecussion and broad interpretation by the examiner reduces the possibility that the claim, once issued, will be interpreted more broadly than is justified. In re Prater, 162 USPQ 541,550-51 (CCPA 1969).

With respect to Applicant's above arguments, Examiner maintains that the teaching of Applicants' Admitted Prior Art (APA) that the table entries are **sorted in ascending/descending alphanumeric order** and Chow's teachings of a multiprocessing system where each of the task execution units stores data from the input source into one of the partition according to a predetermined criteria. The input

source may comprise a table, index, or another data structure. The selection of the partitions is achieved by hashing a sort key. It may be useful to select the partitions according to the storage units containing the rows being sorted or another suitable criteria. Within that sort partition, the data entry is placed according to a sort criteria. **The sort criteria**, however, **does not determine which sort partition to place the data entry into.** Each time a task execution unit performs pipeline query processing operations upon a data entry from the input source, it deposits the resultant data item(s) into different ones of the sort partitions according to a predetermined "round robin" order. Thus, each task execution unit evenly **distributes data** entries into all of **the sort partitions**. After the input data is completely distributed into the sort partitions, the aggregate task of step is complete. Each task execution unit performs all subsequent processing of the data entries in one sort partition and **redistribute data** during multi-level processing (columns 8 and 9) clearly teaches applicants' claimed invention.

In response to applicant's argument, to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

"Test of obviousness is not whether features of secondary reference may be bodily incorporated into primary reference's structure, nor whether claimed invention is

expressly suggested in any one or all of references; rather, test is what combined teachings of references would have suggested to those of ordinary skill in art."

In re Keller, Terry, and Davies, 208 USPQ 871 (CCPA 1981).

"Reason, suggestion, or motivation to combine two or more prior art references in single invention may come from references themselves, from knowledge of those skilled in art that certain references or disclosures in references are known to be of interest in particular field, or from nature of problem to be solved;" Pro-Mold and Tool Co. v. Great Lakes Plastics Inc. U.S. Court of Appeals Federal Circuit 37 USPQ2d 1626 Decided February 7, 1996 Nos. 95-1171, -1181

"[q]uestion is whether there is something in prior art as whole to suggest desirability, and thus obviousness, of making combination." Lindemann Maschinenfabrik GMBH v. American Hoist and Derrick Company et al. U.S. Court of Appeals Federal Circuit 221 USPQ 481 Decided Mar. 21, 1984 No 83-1178.

In response to applicants' argument, Applicants failed to show how this rejection is improper. Examiner gave detailed explanation how APA and Chow references applied and for that reasons, Examiner believed that rejection of the last Office action was proper.

Claim Objections

3. Claims 1, 16 and 21 are objected to because of the following informalities:

As to claim 1, 16 and 21, it is unclear what are the function of this high speed learning method and system. Examiner could not find any support of "a high speed learning" in the body of the claims. The body of the claim discloses dividing portion of a memory corresponding to a data table, distributing data entries and redistributing data entries and hence, there is no support of a high speed learning.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1 – 9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites the limitation "A high speed learning method" in claim.

As to claim 1, the phrase " A high speed learning method " renders the claim indefinite because it is unclear whether this method is a manual method or a computer implemented method.

Claim Rejections - 35 USC § 101

5. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1 – 9 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

MPEP 2106 IV.B.2.(b)

A claim that requires one or more acts to be performed defines a process. However, not all processes are statutory under 35 U.S.C. 101. Schrader, 22 F.3d at 296, 30 USPQ2d at 1460. To be statutory, a claimed computer-related process must either: (A) result in a physical transformation outside the computer for which a practical application in the technological arts is either disclosed in the specification or would have been known to a skilled artisan, or (B) be limited to a practical application within the technological arts.

Claims 1 - 9, in view of the above-cited MPEP sections, are not statutory because they merely recite a number of computing steps without producing any tangible result and/or being limited to a practical application within the technological arts. **The use of a computer has not been indicated.**

Theses claim do not indicate use of hardware on which the software runs to perform the steps recited in the body of the claim. Software or program can be stored on a medium and/or executed by a computer. In other words the software must be *computer-readable.* **The use of a computer is not evident in the claim.** MPEP 2106.IV.B.1(a) refers to "computer-readable" medium with computer program encoded on it."

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1 – 9, 16 – 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Number 6,304,866 issued to Jyh-Herng Chow et al. (hereinafter "Chow") and in view of Applicant's Admitted Prior Art (hereinafter "APA").

With respect to claim 1, Chow teaches A high speed learning method for dividing a data table into parts (column 8, lines 21 – 30 and column 9, lines 6 – 8); distributing data entries in the table arranged in an order to provide periodic empty data entry spaces in each part (column 9, lines 6 – 25); and redistributing data entries in only a part of the table in which an amount of data entries in the part is changed in order to maintain the order of the table without redistributing all the data entries in the table (column 7, lines 31 – 48 and column 8, lines 5 – 20).

Chow does not explicitly teach arrangement of data in the table as claimed. APA discloses the table entries are sorted in ascending/descending alphanumeric order (see Background on paragraph [002].

It would have been obvious to a person of ordinary skill in the art at the time of the invention was made to combine APA with the teaching of Chow to guide a multiprocessing system to performing an aggregate task as quickly as possible, with minimum workload skew among independently operating processing elements (column 2, lines 42 – 44; Chow).

As to claim 2, changing the amount of data entries includes one of inserting and deleting a data entry (APA; [003]).

As to claim 3, the order is a logical ascending and/or descending order of the entries and a logical origin is assigned to the logically first entry in each part to find the entries in each part regardless of the position of one or more empty spaces in each part (APA: [003]).

As to claim 4, the distributing data entries includes moving data entries between parts of the table to maintain a substantially even distribution of the data entries and a substantially even distribution of the empty data entry spaces in each of the parts of the table and reassigning the logical origin of a part to a new logically first entry in the part (column 8, lines 38 – 51 and column 8, lines 20 –25; Chow).

As to claim 5, the distributing data entries are performed substantially continuously (column 9, lines 20 – 21).

As to claims 6, 7 and 8, using a balancing engine for the distributing data entries; using a lookup engine to determine a part of the table having a data entry and using an entry engine to send a data entry key to the lookup engine and receive from the lookup engine a number of a part of the table having the location of the data entry (column 3, lines 50 – 63 and column 8, lines 31 – 51).

As to claim 9, the entry engine reads the part of the table corresponding to the number, sorts the entries in the part using one or more empty data entry spaces, and writes the sorted entries back into the part of the table column 7, lines 19 – 23 and column 9, lines 6 – 21).

Claims 16 – 20 are essentially the same as claims 1 – 9 except that it sets forth the claimed invention as an apparatus rather than a method and rejected for the same reasons as applied above.

Claims 21 – 28 are essentially the same as claims 1 – 9 except that it sets forth the claimed invention as an article of manufacture rather than a method and rejected for the same reasons as applied above.

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Contact Information

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shahid Al Alam whose telephone number is (571) 272-4030. The examiner can normally be reached on Monday-Thursday 8:00 A.M.- 4:00 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John E. Breene can be reached on (571) 272-4107. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Shahid Al Alam
Primary Examiner
Art Unit 2162

8 August 2005